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(54) Title: MULTIFUNCTIONAL POLYMERIC TISSUE COATINGS (57) Abstract Compositions for coating biological and non-biological surfaces, which minimize or prevent cell-cell contact and tissue adhesion, and methods of preparation and use thereof, are disclosed. Embodiments include polyethylene glycol/polylysine (PEG/PLL) block or comb-type copolymers with high molecular weight PLL (greater than 1000, more preferably greater than 100,000); PEG/PLL copolymers in which the PLL is a dendrimer which is attached to one end of the PEG; and multilayer compositions including alternating layers of polycationic and polyanionic materials. The multi-layer polymeric material is formed by the ionic interactions of a polycation and a polyanion. The molecular weights of the individual materials are selected such that the PEG portion of the copolymer inhibits cellular interactions, and the PLL portion adheres well to tissues. The compositions and methods are useful, for example, in inhibiting formation of post-surgical adhesions, protecting damaged blood vessels from thrombosis and restenosis, and decreasing the extent of metastasis of attachment-dependent tumor cells. The compositions and methods are also useful for coating non-biological surfaces such as metallic surfaces.		